REMARKS/ARGUMENTS

The Office Action mailed July 28, 2004 has been reviewed and carefully considered. Claims 4-7 are canceled. Claims 1, 3, 8, and 9 have been amended. Claims 1-3 and 8-10 are pending in this application, with claim 1 being the only independent claim. Reconsideration of the above-identified application as herein amended, and in view of the following remarks, is respectfully requested.

In the Office Action mailed July 28, 2004, claims 1-10 stand rejected under 35 U.S.C. §112, first paragraph, as failing to provide an adequate description of the claim limitations in the specification. The Examiner states that "flow gasifier" should be -- entrained flow gasifier -- as recited in the specification. Independent claim 1 has been amended to recite -- entrained flow gasifier -- which is adequately described in the specification. In view of the above amendments and remarks, it is respectfully requested that the rejection of claims 1-10 under 35.U.S.C. §112, first paragraph, now be withdrawn.

Claims 1-10 stand rejected under 35 U.S.C. §103 as unpatentable over U.S. Patent No. 5,611,963 (Unger) in view of U.S. Patent No. 5,347,068 (Rabe).

Before discussing the cited prior art and the Examiner's rejections of the claims in view of that art, a brief summary of the present invention is appropriate. The present invention relates to a process for the utilization of halogen-containing remainders and waste materials. A reactant including halogen-containing remainders and waste material are supplied to an entrained flow gasifier where a reaction to form a crude gas is performed (see page 7, lines 3-6 of the specification). The heat value of the reactant is greater than 6MJ/kg (page 3, lines 9-13, and page 7, lines 8-11). Combustible materials may be added to the reactant to ensure the required heat value (page 3, lines 13-16).

As the crude gas formed by the reaction leaves the gasifier, it is cooled in a quenching cooler by an injection of fresh water 19 and water 13 that is already enriched with soluble gas components (page 7, lines 11-13). The hot crude gas having a temperature of at least 1100°C is cooled by the steps of partial cooling through contact with a limited amount of water which completely evaporates and passes into crude gas, indirect cooling in a heat exchanger by steam or hot water, and cooling to an ambient temperature while soluble gas components containing halogen/hydrogen are absorbed in water 13 in an absorber 4 (page 4, lines 8-14 and page 7, lines 13-15).

To remove remaining halogen/hydrogen traces, the crude gas is introduced to a fine cleaning stage 5 after exiting the absorber 4 (page 3, lines 21-23 and page 7, lines 15-17. The crude gas is then cooled in a cooler 6 and is usable as a pure gas 8 (page 7, lines 18-20).

Independent claim 1 is amended to incorporate the limitations of dependent claim 7 and now recites that the step of cooling is performed with water that already contains some halogen-hydrogen. Since this limitation was in a pre-existing dependent claim, the amendment is not the type of amendment requiring further search and/or consideration and entry thereof is respectfully requested. Independent claim 1 is further amended to recite that components that are absorbed in the step or absorbing contain halogen-hydrogen. This limitation merely clarifies the components that are absorbed and does not constitute the type of amendment which requires further search and/or consideration. Entry thereof is respectfully requested.

Unger discloses a method of reducing halides in a synthesis gas. More specifically, the goal of Unger is to produce a dry method of removing halides (col. 1, lines 66-67 of Unger). According to Unger, a carbonaceous feed material which contains halide-containing compounds is mixed with a metal compound (col. 2, lines 5-11; and 36-66). The carbonaceous feed material is

gasified and a substantial amount of the metal compound is vaporized (col. 2, lines 12-15; col. 3, lines 1-4). The vaporized metal reacts with the halide from halide containing compounds to form metal halides (col. 2, lines 16-21; col. 3, lines 5-7). The synthesis gas and vaporized metal halides are cooled and the vaporized metal halides condense to solid particles as a result of the cooling (col. 2, lines 23-24; col. 3, lines 17-20). The synthesis gas and solid particles then passes through a solids removal stage such as a cyclone or ceramic candle filter (col. 2, lines 25-29; col. 3, lines 20-24). Since Unger discloses a separate solids removal stage for removing the solid particles from the synthesis gas, Unger fails to disclose the step of "absorbing, after said step of contacting, at least one of solid components, liquid components and gaseous components of the crude gas containing halogen-hydrogen that are soluble in water using a remainder of the predetermined quantity of water that has not been evaporated ".

The Examiner considers one of the cooling stages of Unger to read on the claimed step of absorbing, as recited in independent claim 1. However, Unger specifically discloses that the halides react with metal compounds to form metal halides and that these solids are removed by a solids removal stage without absorption of the solids in water (see, e.g., col. 3, lines 5-7 and 17-24 in Unger). Unger discloses a wholly different solution for removing halides than the presently claimed invention. Instead of absorbing halides using water, Unger discloses forming metal halides by introducing metal compounds to the gasification reaction, solidifying the metal halides during cooling, and removing the solidified metal halides in a solids removal stage. Accordingly, Unger fails to teach or suggest that these metal halides are removed in a step of absorbing using water, as expressly recited in independent claim 1.

Rabe fails to teach or suggest what Unger lacks. Rabe discloses a two stage gasification in which waste material and combustible material are first gasified in a fixed-bed

gasifier 1 (col. 5, lines 44-51). The crude gas formed in the fixed bed gasifier is introduced to a post-gasifier 9 in which the crude gas is mixed with waste oil 11 and oxygen 12 (col. 6, lines 5-33). Conversion of the hydrocarbons in the crude gas and waste oil is performed by a flame in the post gasifier (col. 6, lines 46-51). A cleaned disposal flow 15 is subjected to a quenching liquid flow 14 for cooling (col. 6, lines 64-66) and is then subjected to conventional gas cleaning (col. 7, lines 1-3).

Rabe also fails to teach the step of "absorbing, after said step of contacting, at least one of solid components, liquid components and gaseous components of the crude gas that are soluble in water using a remainder of the predetermined quantity of water that has not been evaporated", as recited in independent claim 1. Rather, Rabe discloses only the step of quenching the gas as it leaves the post gasifier 9. After that, Rabe discloses that the gas is subjected to convention gas cleaning (col. 7, lines 1-3 of Rabe). The step of quenching disclosed by Rabe corresponds to the step of contacting the crude gas with a predetermined quantity of water", as recited in independent claim 1. Since Rabe only discloses cleaning the gas using convention gas cleaning after the step of quenching, Rabe fails to teach or suggest the step of absorbing, after the step of contacting, a component of the crude gas including halogen-hydrogen using a remainder of water that has not been evaporated from the step of contacting, as recited in independent claim 1.

In view of the above amendments and remarks, independent claim is allowable over Unger in view of Rabe.

Dependent claims 2-3 and 8-10, being dependent on independent claim 1, are deemed allowable for the same reasons expressed above with respect to independent claim 1.

The application is now deemed to be in condition for allowance and notice to that effect is solicited.

It is believed that no fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,

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